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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/854,580      | 05/15/2001  | Qian Lin             | 10006299            | 8971             |

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HEWLETT-PACKARD COMPANY  
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EXAMINER

HUNG, YUBIN

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 09/854,580      | LIN ET AL.   |
| Examiner                     | Art Unit        |              |
| Yubin Hung                   | 2625            |              |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 July 2004.  
 2a) This action is FINAL. 2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-4, 6-12, 14-18 and 20-26 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4, 6-12, 14-18 and 20-26 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

***Response to Amendment/Arguments***

1. This action is in response to amendment filed July 6, 2004
2. Claims 5, 13 and 19 have been cancelled and claims 21-26 have been added. As a result, claims 1-4, 6-12, 14-18 and 20-26 are still pending.
3. Applicant's arguments filed 07/06/04 with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection. See below.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 8, 15 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Schildkraut et al. (US 6,292,574).

6. Regarding claim 1, similarly claims 8, 15 and 21, Schildkraut discloses:

- automatically detecting human faces in an image using face detection algorithms and automatically locating the human faces in the image [Fig. 2, numeral S10; Fig. 6; Col. 4, line 13-Col. 5, line4]
- automatically locating eyes in the human faces [Fig. 2, numerals S16-S30; Figs. 9, 11]
- automatically enhancing an appearance of the image based on the human faces in the image [Abstract: lines 7-8; claim 1 (d); claim 22 (c). Note that the image is enhanced after pixels with red eye defect are corrected]
- wherein the step of automatically enhancing comprises automatically determining if there exists a red eye artifact [Fig. 2, numerals S16; Fig. 9; Col. 5, line 21-Col.6, lines 15]

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-4, 9-12, 16-18 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schildkraut et al. (US 6,292,574) as applied to claims 1, 8, 15 and 21, further in view of Surve et al. (US 6,591,008).

9. Regarding claims 2-4, and similarly claims 10-12, 16-18 and 22-24, Schildkraut et al. discloses everything except the following, which Surve et al. teaches:

- wherein the module for enhancing the appearances of the image includes a module for automatically enhancing lightness levels (claim 2), contrast levels (claim 3) and color levels (claim 4) of the human faces [Fig. 1, numerals 50-70; Fig. 3: numeral 290; Fig. 4, numeral 300; Col. 3, lines 58-63; Col. 4, lines 5-6. Note that clearly Fig. 4, numeral 300 adjusts both contrast and lightness (i.e., luminance)]

Surve et al. and Schildkraut et al. are combinable because they have aspects that are from the same field of endeavor of enhancing images according to detected faces or facial features.

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to modify Schildkraut et al. with the teaching of Surve et al. by enhancing an appearance of the image based on the human faces. The motivation would have been to assist people who are visually impaired to be able to better appreciate images that contain faces.

Therefore, it would have been obvious to combine Surve et al. with Schildkraut et al. to obtain aspects of the invention as specified in claims 2-4, respectively.

10. Regarding claim 9, Surve et al. further discloses

- the image is a digital image [Abstract. Line 1]

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11. Claims 6, 14, 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schildkraut et al. (US 6,292,574) and Surve et al. (US 6,591,008) as

applied to claims 2-4, 9-12, 16-18 and 22-24, further in view of Acker et al. (US 6,009,209).

12. Regarding claim 6, and similarly claims 14, 20 and 25, Schildkraut et al. and Surve et al. disclose everything except the following, which Acker et al. teaches:

- reducing or removing the red eye artifact from the human faces [Fig. 5, numeral 109; Fig. 9, numeral 504; Fig. 11; Fig. 13]

Acker et al., Surve et al. and Schildkraut et al. are combinable because they have aspects that are from the same field of endeavor of enhancing images according to detected faces or facial features.

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to modify Schildkraut et al. and Surve et al. with the teaching of Acker et al. by detecting and removing red-eye effects from the image. The motivation would have been to remove the unpleasant appearance of red-eye defects in an image of a person's face caused by, e.g., a flash when the image was taken in order to produce a more natural-looking face.

Therefore, it would have been obvious to combine Acker et al. with Surve et al. and Schildkraut et al. to obtain aspects of the invention as specified in claim 6.

13. Claims 7 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Schildkraut et al. (US 6,292,574) and Surve et al. (US 6,591,008) as applied to claims 2-4, 9-12, 16-18 and 22-24, further in view of Fowler (US 5,410,618).

14. Regarding claim 7, and similarly claim 26, Schildkraut et al. and Surve et al. disclose everything except the following, which Fowler teaches:

- the enhancing step includes using a mapping technique to produce the image with target levels for a mean value or a variation value [Col. 1, lines 39-40 (global enhancement); Fig. 1, numerals 5, 6; Col. 3, lines 15-30 (local enhancement). Note that when applied to the entire image, local enhancement becomes global enhancement and *vice versa*]

Fowler, Surve et al. and Schildkraut et al. are combinable because they have aspects that are from the same field of endeavor of enhancing images according to detected faces, facial features or other criteria.

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to modify Schildkraut et al. and Surve et al. with the teaching of Fowler by using a mapping technique to produce the image with target levels for a mean value or a variation value. The motivation would have been to give a user better control in the enhancement process so that the resultant image can have a desired appearance or perceptual quality specific to the user's preference.

Therefore, it would have been obvious to combine Fowler with Surve et al. and Schildkraut et al. to obtain aspects of the invention as specified in claim 7.

***Conclusion and Contact Information***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Khosravi et al. (US 6,184,926) - discloses a method and system that can automatically locate eyes from faces (see abstract, Fig. 2 and Col. 3, lines 16-26. (Note: This reference was listed in the IDS and therefore is known to the applicant.)

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

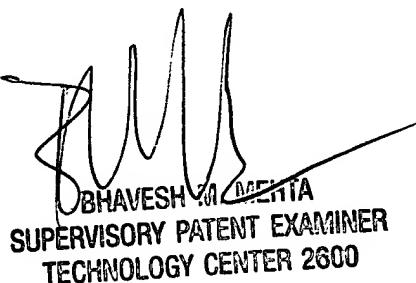
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yubin Hung  
Patent Examiner  
April 7, 2005



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